DOCUMENT RESUME

ED 275 916 CG 019 448

AUTHOR Suler, John R.
TITLE Computer-Simulated Psychotherapy as an Aid in Teaching Clinical Psychology.
PUB DATE Aug 86
NOTE 16p.; Paper presented at the Annual Convention of the American Psychological Association (94th, Washington, DC, August 22-26, 1986).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Clinical Psychology; College Students; *Computer Assisted Instruction; Computer Oriented Programs; *Computer Simulation; *Computer Software; Higher Education; Interviews; *Psychotherapy; *Teaching Methods

ABSTRACT

This document explains the use of Eliza, a widely known computer program that reacts to the user by simulating the responses of a psychotherapist, as a teaching aid in undergraduate clinical psychology courses. The methods for conducting the exercise, for integrating it into the course syllabus, and for evaluating its impact on students are discussed. Feedback from students who participated in the exercise is presented and methods for improving the exercise are listed. It is noted that having students interact with the program can enhance their understanding of interviewing and psychotherapy, the contrasts between clinical interactions controlled by humans or by computers, and the role computers may play in the mental health field. Other software that may be used as teaching aids in clinical psychology courses is briefly reviewed. (Author/NB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED275916

Computer-Simulated Psychotherapy as an Aid in Teaching Clinical Psychology

John R. Suler

Rider College

CG 019448

Presented at the Convention of the American Psychological Association, Washington, D.C., August, 1986.

Address: John Suler, Ph.D., Department of Psychology, Rider College, Lawrenceville, NJ 08648

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

John Suler

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Abstract

Eliza, a widely known computer program that reacts to the user by simulating the responses of a psychotherapist, can be used as a teaching aid in undergraduate clinical psychology courses. Having students interact with the program can enhance their understanding of interviewing and psychotherapy, the contrasts between clinical interactions controlled by humans and computers, and the role computers may play in the mental health field. The method for conducting the exercise, for integrating it into the course syllabus, and for evaluating its impact on students are discussed.

Computer-Simulated Psychotherapy as an Aid
in Teaching Clinical Psychology

In the 1960's researchers at MIT pioneered the development of an interactive computer program, now widely known as "Eliza," which simulates the actions of a psychotherapist. In reaction to the user's questions and statements, the program's responses imitate the therapeutic techniques of reflection, focussing, clarification, and open-ended inquiry. Although these programs were never intended to serve as "real" psychotherapy, they can be useful heuristic tools for understanding the psychotherapeutic process. I have used a version of Eliza adapted for IBM microcomputers as a teaching aid in an undergraduate clinical psychology course. Having students interact with Eliza provides them with an intensive, individualized learning experience that can highlight important concepts about interviewing, psychotherapy, and clinical psychology. It also can enhance their understanding of the role computers may play in clinical activities.

Method of the Exercise

Instructions for the exercise and for operating the Eliza program are described in a handout and discussed in class. On their own time outside of class, the students interact with Eliza for approximately 45 minutes. The instructions emphasize that during this time they honestly present a personal problem and persist in seeking help, despite any inadequacies or therapeutic

mistakes they perceive in the program. After this period of seriously engaging Eliza in a therapeutic interaction, the students are instructed to "experiment" with the program, perhaps even "trick" it into responding with erroneous or nonsensical statements -- and by doing so gain insight into how the program works.

An example of an fairly productive interaction with Eliza is shown in Figure 1. Though the program's responses sometimes assist the user in clarifying and exploring a problem, more often it leads the person into a rather frustrating dialogue in which Eliza is not perceived as helpful. An example of such a dialogue is shown in Figure 2. Therefore, before they begin the exercise, I inform the students about Eliza's deficiencies and suggest that one purpose of the exercise is to understand what constitutes effective psychotherapy by realizing what Eliza does wrong -- i.e. learning by way of negative example.

After the students completed the exercise, we discussed it in class and they prepared a paper in which they analyzed their interaction with Eliza. The following themes were emphasized:

a. Their personal reactions to Eliza, including their perceptions of it as their "therapist"; their thoughts and feelings about Eliza; whether or not they felt helped.

b. An evaluation of Eliza's therapeutic techniques and effectiveness; how the program seems to work; its strengths and weaknesses.

c. An analysis of the advantages and disadvantages of

computers in psychoanalytic, behavioral, and humanistic therapies, and the types of problems and clients for which computers might be helpful.

d. Other possible applications in the field of mental health for computer programs that interact with clients.

Evaluation of the Exercise

After discussing the exercise and handing in their paper, one class (N = 19, 12 females, 7 males, mean age = 21) answered a questionnaire (see Table 1) consisting of rating scale items that assessed their reactions to the project. Their responses (see Tables 2 & 3) indicated that the exercise had a substantial impact on them. A large majority agreed that the exercise was a valuable learning experience and that future students should participate in it. Ninety percent agreed that they better understood what is important for psychotherapy to be effective, and, in particular, what is important in the relationship between the therapist and client. These responses seemed to be related to the students' unanimous agreement that they had learned about the advantages and disadvantages of a computer conducting psychotherapy. In class and in their papers students discussed important issues about human versus computerized therapy, such as:

- the role of empathy, warmth, identification, and "real" relationships in psychotherapy.
- whether computers could be more objective and non-judgmental than humans.

- whether fears about self-disclosure, expressing emotions, and confidentiality would be greater with humans or computers.
- the cognitive and perceptual capabilities of computers vis-a-vis humans, including breadth and efficiency of memory, language abilities, and access to visual and auditory information from the client.
- what types of clients would prefer a human, or a computer.
- what capabilities computers may have in the future
- how a therapist's personality and theoretical orientation affect psychotherapy, as compared to a computer program's "personality" and theoretical orientation.

The exercise was useful in highlighting important themes about the major theories of psychotherapy. The students unanimously agreed that they better understood the advantages and disadvantages of a computer conducting psychoanalytic treatment. We discussed such issues as: the effectiveness of a computer for creating the atmosphere of ambiguity and neutrality recommended by classical theory (is it the perfect "blank screen"?); collecting and remembering data for making interpretations; transference reactions to computers (perceptions of Eliza as a distant, unempathic parental figure were common); clients who may use a computer as a "selfobject" to fill-in for their psychological deficiencies; and whether computers have countertransference (i.e. does the program reflect the personality structure and biases of its creator). These issues

often led to discussions of computers in other types of insight-oriented therapies, particularly humanistic approaches that emphasize an "authentic" relationship between the client and therapist.

Although we discussed the applications of computers in behavior therapy (its use in behavioral assessments; shaping interpersonal, behavioral, and cognitive skills; conducting such procedures as systematic desensitization) not all students agreed that working with Eliza helped them better understand the role of computers in behavioral treatment. This may have been due to fact that Eliza takes an insight-oriented approach, and that we had not yet completed the section on behavior therapy in the course syllabus.

Nevertheless, most students did agree that they better understood how computers might be used in the mental health field. We discussed the cost-effectiveness of computers, their application according to different types of psychopathology, and their use for structured interviews, diagnostic assessments, and psychological testing. That there was no consensus about whether they better understood how computer programs are designed to interact with people may be attributed to the wide differences in the students' previous exposure to computer programming.

The students' personal reactions to Eliza varied greatly. They were divided on whether they thought working with Eliza gave them a sense of what it would be like to be in therapy and whether they learned anything about themselves. As compared to

the students who agreed, twice as many disagreed that Eliza had helped them with their problem. In class the students readily described their impressions of the program's deficiencies as a psychotherapist. However, twice as many students agreed as disagreed that they had learned about their own personal thoughts and feelings about psychotherapy. Therefore, Eliza generally does not supply students with an accurate experiential understanding of what therapy is like; nor does it resolve their problems. It was not intended to. It can be used as a stimulus to help them explore their thoughts and feelings about psychotherapy, but, in doing so, the instructor must help the students appreciate the differences between their experience with Eliza and what actual, effective psychotherapy is like.

The results above suggest that methods for improving the exercise may include: (a) providing guidelines that maximize each student's ability to apply previous knowledge of computers and computer programming; (b) including readings about computers in clinical activities; and (c) adding other interactive computer programs that illustrate methods in structured interviewing, psychological testing, and behavioral treatments.

Software and Its Availability

There is a wide variety of software that may be used as teaching aids in clinical psychology courses. Programs that administer, score and interpret psychological tests are available for standardized personality assessment inventories, including the Myers-Briggs Type Indicator, 16 Personality Factor Test, the

Minnesota Multiphasic Personality Inventory, and the California Personality Inventory. Programs are also available for the Adjective Checklist and the Adaptive Behavior Scale. For conducting structured clinical interviews, there are software for intake evaluations and mental status exams (which involve assessments of presenting complaint, symptoms, current situation, cognitive and emotional characteristics) and programs for taking a history of social, psychological, and developmental functioning (family relations, occupation, education, social relationships, etc.). Software for assessing specific problem areas include eating disorder inventories, health problem checklists, test anxiety scales, stress evaluations, and alcohol assessment. More general assessment programs include personal problem checklists that assess the number, type and hierarchy of personal problems. Catalogs that describe these programs are available from many of the major publishers and resource services that provide information and supplies for psychological testing and assessment.

The Eliza program may be obtained from local user groups, and often can be found in the software packages of college and university mainframe systems. Eliza diskettes also are available from various computer resource services. Versions of Eliza seem to differ only in slight modifications of the breadth and variety of responses the program offers to the user's statements and questions. Versions sold by services that market Eliza as a computer "game" may include modifications of the program that detract from its potential as a serious educational exercise. For

more information about the history and descendants of Eliza, as well as other information about computer applications in clinical psychology, see Using computers in clinical practice: Psychotherapy and mental health applications, Marc Schwartz (Ed), Haworth Press, 1983.

Figure 1: Sample of an Interaction with Eliza

E: How do you do. Please tell me your problem.

S: I'm having trouble in school.

E: Is it because you're having trouble in school that you came to me?

S: Yes. I need help.

E: You seem quite positive.

S: I might fail out. I have to get better grades.

E: Why do you need to tell me you might fail out?

S: It's important for me to do well in school.

E: I'm not sure I understand you fully.

S: I have to do well. I don't want to disappoint my parents.

E: Can you elaborate on that?

S: They would be angry if I failed.

E: Do you think it likely that you failed?

S: I already failed two courses, and my father had a fit.

E: Do you say you already failed two courses for some reason?

S: I definitely studied as hard as I could.

E: That's quite interesting.

S: So I don't know why I failed.

E: Don't you really know why you failed?

S: You sound just like my father.

E: Tell me more about your family.

S: My parents expect too much of me. It makes me angry.

E: Your parents expect too much of you -- that's interesting.

S: Do you think it's right for them to expect so much?

E: We were discussing you, not me.

Figure 2: Eliza at Her Worst

E: How do you do. Please tell me your problem.

S: I'm failing my courses. I need help.

E: Your courses, that's interesting.

S: Are you going to help me?

E: Why are you interested in whether I am going to help you or not?

S: Why else would I be talking to you?

E: Why do you ask?

S: Why do you always answer my question with a question?

E: Why do you always say your question with a question?

S: You're not making any sense.

E: What makes you think I am not making any sense?

S: Because you say stupid things.

E: Is that the real reason?

S: Because you're just a dumb computer.

E: Do computers worry you?

S: I hate computers, and I think I hate you.

E: Why do you mention computers.

S: I'm leaving. I can't stand you anymore.

E: Is it because you are leaving that you came to me?

S: You really are a stupid shit!

E: My, my, such language!

S: Goodbye!

E: Does that have anything to do with the fact that your course?

S: Before I go, I'm pulling your plug!

E: Why do you need to tell me before you go you're pulling my plug?

Table 1

Items on the Questionnaire Evaluating the Eliza Exercise

1. Eliza helped me with my problem.
2. As a result of working with Eliza, I better understand what psychotherapy might be like.
3. As a result of working with Eliza, I better understand what is important for psychotherapy to be effective.
4. I learned about the advantages and disadvantages of a computer doing psychotherapy.
5. As a result of working with Eliza, I learned something about myself.
6. I better understand how computer programs can be designed to interact with people.
7. I better understand the advantages and disadvantages of a computer doing psychoanalytic psychotherapy.
8. I better understand the advantages and disadvantages of a computer doing behavioral therapy.
9. I learned more about my own personal thoughts and feelings about psychotherapy.
10. I better understand how computers might be used in the mental health field.
11. I better understand what is important in the relationship between a therapist and a client.
12. I better understand what it would be like to be in psychotherapy.
13. Working with Eliza was a valuable learning experience.
14. I think that future students in this course should have the opportunity to work with Eliza.

Note: Rating scale for responding to items: 1 = strongly agree, 2 = agree, 3 = cannot say, 4 = disagree, 5 = strongly disagree

Table 2

Responses to the Questionnaire Items

Item	Number of students responding at each level					Mean Rating*
	Strongly agree	Agree	Cannot Say	Disagree	Strongly Disagree	
1	0	6	0	3	10	3.9
2	1	6	3	8	1	3.1
3	5	12	1	0	1	1.9
4	8	11	0	0	0	1.6
5	1	8	4	6	0	2.8
6	0	6	7	6	0	3.0
7	2	17	0	0	0	1.9
8	0	8	6	4	1	2.9
9	3	9	1	6	0	2.5
10	1	13	4	1	0	2.3
11	7	10	0	2	0	1.8
12	1	7	3	6	2	3.1
13	4	11	2	0	2	2.2
14	9	9	1	0	0	1.6

N = 19

* Based on rating scale: 1 = strongly agree, 2 = agree, 3 = cannot say, 4 = disagree, 5 = strongly disagree

Table 3

Responses to the Questionnaire Items: Number and Percentage of Students Responding in Combined Categories

Item	Total Agree	(%)	Total Cannot Say	(%)	Total Disagree	(%)
1	6	(31)	0	(0)	13	(69)
2	7	(36)	3	(17)	9	(47)
3	17	(90)	1	(5)	1	(5)
4	19	(100)	0	(0)	0	(0)
5	9	(48)	4	(21)	6	(31)
6	6	(31)	7	(38)	6	(31)
7	19	(100)	0	(0)	0	(0)
8	8	(43)	6	(31)	5	(26)
9	12	(64)	1	(5)	6	(31)
10	14	(74)	4	(21)	1	(5)
11	17	(90)	0	(0)	2	(10)
12	8	(43)	3	(14)	8	(43)
13	15	(80)	2	(10)	2	(10)
14	18	(95)	1	(5)	0	(0)

Note. Total agree = students answering "strongly agree" and "agree"
Total disagree = students answering "strongly disagree" and "disagree"

N = 19